

WIDE-BAND ARRAY ANTENNAABSTRACT OF THE DISCLOSURE

5 The present invention provides a wide-band array antenna using a single real-valued multiplier for each antenna element, which is simple in construction and suitable for WCDMA mobile communication system. A rectangular array antenna is formed by  $N \times M$  antenna elements. Each antenna element has a frequency dependent gain which is the same for all elements. Each antenna element is connected to a multiplier with a single real-valued coefficient, which is determined by properly selecting number of points on a u-v plane defined for simplifying the design procedure according to the design algorithm of the present invention.